

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Rapid Emergency Medicine Score (REMS) in the Trauma Population: A Retrospective Study
AUTHORS	Cannon, Chad; Imhoff, Bryan; Thompson, Nia; Hastings, Michael; Nazir, Niaman; Moncure, Michael

VERSION 1 - REVIEW

REVIEWER	Emanuel Rivers Wayne State University USA
REVIEW RETURNED	04-Mar-2014

GENERAL COMMENTS	This is an interesting and worthy derivation study. The patient population is heavily weighted to lower mortality groups. Thus, the true test would be a validation study. As with any scoring system, the expertise of the treating center will determine outcomes. The authors mention this is the discussion as a comparator. It should be a limitation with any scoring system. Otherwise, excellent and well written study.
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REVIEWER	Victor Coba, MD Research Director, Dept of Emergency Medicine St. John Macomb Oakland Hospital Associate Research Director, Dept of Emergency Medicine St. John Hospital and Medical Center
REVIEW RETURNED	05-Mar-2014

GENERAL COMMENTS	<p>Great study and design for evaluation of a possible different trauma scoring system that is comparing to our current standard trauma scoring systems.</p> <p>Some points that would need clarification or re-arrangement in the manuscript:</p> <p>Methods section:</p> <p>1) Page 6: Discuss in the protocol about the variable collected, yet none of these variables were individually reported. Can you provide in Table 2, these baseline information for the trauma group.</p> <p>2) Page 6: Discuss APACHE II score and REMS, was APACHE II score obtained for some of the trauma patients</p> <p>Results section:</p> <p>1) Page 8: line 8-32. Like some clarification as to rationale why or how it the scores for low REMS and high REMS were made.</p> <p>2) Page 8 / Table 3: how were REMS score groups determined, it</p>
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	<p>wasn't by multiple of 2 or 3, was there a systematic means to dividing the groups.</p> <p>3) Figure 1 not attached in the review documents, unable to comment on results.</p> <p>4) Page 8: Unable to verify "superior" of REMS. Recommend to</p> <p>Discussion:</p> <p>1) Page 10: Discussion of the superiority of REMS compared to the other trauma scoring systems. Was this study designed to determine the superiority of REMS or was the design as a non-inferior study of REMS compared to the other trauma scoring systems? If this was a non-inferior study, the discussion should clarify.</p> <p>2) If pursuing superiority study design is the purpose, then the REMS distribution and the other trauma scoring systems have a significant impact on the curvature of the AUC curve.</p> <p>3) Page 10&13: would recommend to discuss the comparison and contrast of the REM score compared to the current trauma standards for RTS, ISS, and SI rather than the other way around.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer #1

1. As with any scoring system, the expertise of the treating center will determine outcomes. The authors mention this is the discussion as a comparator. It should be a limitation with any scoring system.

Response: We agree and have added an additional bullet point to this effect in the strengths and limitations section.

Reviewer #2

Methods section:

2. Page 6: Discuss in the protocol about the variable collected, yet none of these variables were individually reported. Can you provide in Table 2, these baseline information for the trauma group.

Response: We've added the following variables to Table 2: systolic blood pressure (SBP), diastolic blood pressure (DBP), RR, HR, oxygen saturation and GCS.

3. Page 6: Discuss APACHE II score and REMS, was APACHE II score obtained for some of the trauma patients

Response: APACHE II scores were not obtained for our trauma patients thus makes evaluation impractical. To alleviate potential confusion on this topic, we've moved the description of APACHE II subcomponents from the Materials and Methods section of the manuscript to the Introduction section.

Results section:

4. Page 8: line 8-32. Like some clarification as to rationale why or how it the scores for low REMS and high REMS were made.

Response: We used the groupings described below. No change made to manuscript for this item.

5. Page 8 / Table 3: how were REMS score groups determined, it wasn't by multiple of 2 or 3, was there a systematic means to dividing the groups.

Response: The study team looked at the distribution of patient mortality by each incremental REMS score (1-26). Based on this distribution, the authors used natural cutoffs as well as their clinical judgment to develop the REMS groupings used in the study. We've added this explanation to the results section of manuscript.

6. Figure 1 not attached in the review documents, unable to comment on results.

Response: Figure 1 will be resubmitted with revised manuscript as a separate TIFF file.

7. Page 8: Unable to verify "superior" of REMS. Recommend to

Response: The feedback we received for this item seemed to be truncated/incomplete. We assume that the review was referring to the use of "superior" in comparing REMS to RTS despite overlapping confidence intervals. We have changed the wording in the manuscript accordingly.

Discussion:

8. Page 10: Discussion of the superiority of REMS compared to the other trauma scoring systems. Was this study designed to determine the superiority of REMS or was the design as a non-inferior study of REMS compared to the other trauma scoring systems? If this was a non-inferior study, the discussion should clarify.

Response: We discussed this item with our statistician and performed a review of superiority and non-inferiority study designs. From our interpretation, "superiority" and "non-inferiority" study designs are applicable more to randomized controlled trials as opposed to cross-sectional studies such as this. That said, let us know if we've misunderstood the question.

Reporting of Noninferiority and Equivalence Randomized Trials. JAMA. 2012;308(24):2594-2604

<http://www.fda.gov/downloads/Drugs/.../Guidances/UCM202140.pdf>

9. If pursuing superiority study design is the purpose, then the REMS distribution and the other trauma scoring systems have a significant impact on the curvature of the AUC curve.

Response: The figure that wasn't included in your first set of review documents (Figure 1) shows the AUC curve for REMS.

10. Page 10&13: would recommend to discuss the comparison and contrast of the REM score compared to the current trauma standards for RTS, ISS, and SI rather than the other way around.

Response: We were not sure the specific suggestion/feedback for this item.

VERSION 2 – REVIEW

REVIEWER	Victor Coba, MD Associate Research Director St. John Hospital and Medical Center Research Director St. John Macomb Oakland Hospital
REVIEW RETURNED	08-Apr-2014

GENERAL COMMENTS	The authors answered all the questions and revisions made accordingly.
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